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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,826

10/30/2003

Takayuki Saito

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EXAMINER

MARKOFF, ALEXANDER

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/695,826

Applicant(s)

SAITO ET AL.

Examiner

Alexander Markoff

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1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/7/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-8 in the reply filed on 10/17/06 is acknowledged.
2. Claims 9-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/17/06.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite because it is not clear what structure is required by recitation of the requirement for the substrate to be rotated in such a manner that the processing liquid is stationary with respect to the substrate.

The claims are incomplete because they omit essential structural cooperative relationships of the recited elements, such omission amounting to a gap between the necessary structural connections.

Claim 3 and the dependent claims are indefinite because it is not clear how the recitation of the function of the removal unit limits the structure of the unit and the apparatus.

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Claim 5 is indefinite because it is not clear how the recitation of a function of the recovery unit limits the structure of the unit and the apparatus.

Claim 8 is indefinite because it is not clear how the recitation of a function or intended use of the purge mechanism limits the structure of the unit and the apparatus.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1058300.

EP 1058300 teaches an apparatus for processing substrates. The apparatus comprises the claimed parts. EP 1058300 teaches operating the apparatus in a such manner that the liquid delivered to the substrate to be processed is stationary with respect to the substrate (column 8, lines 15-25). Moreover, it is noted that the apparatus of EP 1058300 is capable of rotating the substrate at a desire speed including the speed at which the liquid is stationary. Thereby, in the broadest interpretation of what is claimed, any embodiment of the apparatus of EP 1058300 with horizontal orientation of the substrate meets the claimed limitations. See entire document, especially column 8,

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lines 15-25, column 5, line 6 – column 6, line 32. As to the limitations of claims 4, 5, 8: EP 1058300 teaches removal of the process liquids by suction it is inherent that at least some gas would be sucked together with processing liquid. The suction mechanism of EP 1058300 removes and evacuates the processing fluids from the substrate and the surrounding and thereby function as a purge mechanism. Removal of the processing liquids by suction inherently delivers a gas to the surface of the processed substrate. As to the limitation of claim 4, requiring a gas liquid separator: it is noted that the liquids used by EP 1058300 and a gas sucked together with these liquids would be naturally separated at least to some extent in any tube, vessel or analytical device disclosed by EP 1058300. Thereby, EP 1058300 inherently discloses a gas-liquid separator.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1058300.

EP 1058300 does not explicitly teach a recovery unit. However, the processing liquids disclosed does EP 1058300 are relatively expensive ultra-pure liquids for semiconductor processing. It would have been obvious to an ordinary artisan at the time the invention was made to provide in EP 1058300 a device to recover the liquids used by the apparatus of EP 1058300 in order to reduce the operation cost and to reduce the impact to the environment.

11. The following are alternative rejections of claims 4 and 8:

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1058300 in view of US 2003/0041968.

For this rejection the claim was alternatively interpreted as requiring a purge mechanism, which comprises a gas-delivering unit.

EP 1058300 does not specifically teach a device for delivering a gas.

US 2003/0041968 teaches providing an inert gas delivering unit into an apparatus for cleaning peripheral portions of semiconductor substrates in order to dry the substrates and to maintain inert atmosphere inside of the apparatus. See at least Figures 2a-c, 4a-b and related description.

It would have been obvious to an ordinary artisan at the time the invention was made to provide in the apparatus of EP 1058300 a gas delivering unit in order to enable performing of drying operation in the apparatus with reasonable expectation of success because US 2003/0041968 teaches such as known for similar apparatuses.

13. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1058300 in view of JP 10-012523.

For this rejection the claims were alternatively interpreted as requiring a separate gas-liquid separator.

EP 1058300 does not specifically teach a gas liquid separator. However, JP 10-012523 teaches that it was known to provide a suction liquid-collecting device with gas-liquid separators and recovering units in order to reduce cross contamination in semiconductor processing apparatuses.

It would have been obvious to an ordinary artisan at the time the invention was made to provide the apparatus of EP 1058300 with the collecting device of JP 10-012523 in order to reduce cross-contamination of the processing liquids and to recover the used liquids to reduce the operation cost.


Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,523,553 is made of the record. This document has the same priory application with EP 1058300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 571-272-1304. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Alexander Markoff
Primary Examiner
Art Unit 1746

AM

ALEXANDER MARKOFF
PRIMARY EXAMINER